Extron® Electronics

INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

IPL M PDP-ES

IP Link Tools

68-1021-01
Rev. A
11 04

Precautions

Safety Instructions • English

⚠ **This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.**

⚡ **This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.**

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

⚠ **Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).**

⚡ **Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.**

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions • Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

⚠ **Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.**

⚡ **Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.**

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

⚠ **Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.**

⚡ **Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.**

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'Il y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalentamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:	**Europe, Africa, and the Middle East:**
Extron Electronics 1230 South Lewis Street Anaheim, CA 92805, USA	Extron Electronics, Europe Beeldschermweg 6C 3821 AH Amersfoort The Netherlands
Asia:	**Japan:**
Extron Electronics, Asia 135 Joo Seng Road, #04-01 PM Industrial Bldg. Singapore 368363	Extron Electronics, Japan Daisan DMJ Bldg. 6F, 3-9-1 Kudan Minami Chiyoda-ku, Tokyo 102-0074 Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Quick Start Guide — IPL M PDP-ES

To install and set up the IPL M PDP-ES interface card, follow these steps:

Step 1

Turn all of the equipment off and disconnect it from the power source.

Step 2

Remove the preinstalled Pioneer communication ES card from the Pioneer plasma. Refer to *Removing the Pioneer communication ES card* in chapter 2 for more information.

Step 3

Install the Extron IPL M PDP-ES interface card into the Pioneer plasma. Refer to *Installing the Extron IPL M PDP-ES card* in chapter 2 for more information.

Step 4

Affix the Extron IPL M PDP-ES sticker label to the display, covering the existing Pioneer label.

Step 5

Attach the network (LAN) cable to the LAN port of the IPL M PDP-ES interface card installed in the Pioneer plasma. Attach the other end to a switch, hub, router, or a host PC, as shown below. See *Ethernet/LAN port* in chapter 3 for more information on this connection.

**Extron
IPL M PDP-ES**
Pioneer Plasma Ethernet Card

RS-232

LAN

**Extron
MLC 206**
MediaLink™ Controller

PC
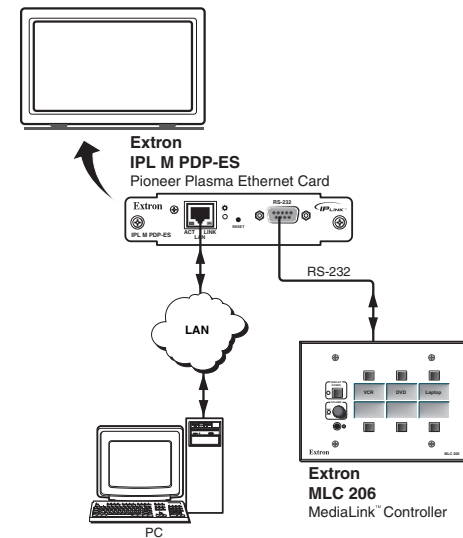
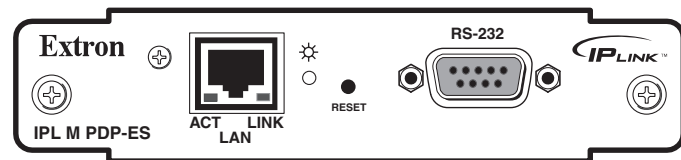## Quick Start Guide — IPL M PDP-ES, cont'd

Step 6

Attach the serial communication cable to the RS-232 port of the IPL M PDP-ES interface card within the Pioneer plasma. Attach the other end to a controller or host PC, as shown under step 5.

Step 7

Configure the IPL M PDP-ES interface card using the ARP command. Refer to *IPL M PDP-ES interface card configuration* in chapter 3 for more information.

Step 8

Communicate with the IPL M PDP-ES interface via the default Web pages. Refer to *Communication with the interface card* in chapter 4 for more information.

The IPL M PDP-ES interface card

Table of Contents

Table of Contents, cont'd

All trademarks mentioned in this manual are the properties of their respective owners.

IPL M PDP-ES

Chapter One

Introduction

About this Manual

About the IPL M PDP-ES Interface Card

Features

Introduction

About this Manual

This manual contains information about the Extron IPL M PDP-ES interface card, including its installation, configuration, and operation.

This compact Ethernet interface card installs into the Expansion Solutions (ES) slot of a compatible Pioneer plasma display. Compatible Pioneer plasma displays include the following models:

- PDP-504CMX
- PDP-504CMX-S
- PDP-434CMX
- PDP-50MXE1
- PDP-50MXE1-S
- PDP-43MXE1
- PDP-43MXE1-S

About the IPL M PDP-ES Interface Card

The Extron IPL M PDP-ES is an Ethernet-based interface card designed to enhance the support and control of Pioneer's fourth generation plasma displays.

The IPL M PDP-ES is powered directly from the plasma, and includes factory-loaded control and scheduling features accessible via a standard Web browser.

The IPL M PDP-ES additionally provides an RS-232 port to connect locally for diagnosis or third-party control.

Features

Locally powered — No external power supply is necessary because power is taken directly from the plasma itself.

Remote management — The IPL M PDP-ES allows you to remotely manage the fourth generation Pioneer plasma displays.

- **Real time control —** Using the on-board Web server, administrative users have complete remote control of the Pioneer plasma in real time.

- **Monitor/Schedule —** Using the schedule or monitor pages, you can monitor the condition of the Pioneer plasma and schedule key maintenance activities. When specified conditions are met or exceeded, an email notification can be sent to a recipient.

- **Email Alerts —** Email reminders can be sent to a specified mailbox automatically when certain conditions are true. When a scheduled or monitored event occurs (such as the number of usage hours on the plasma) maintenance personnel can be notified via an email message.

Built-in multi-level security — Multiple levels of password protection provide appropriate security and functional access to features on the Pioneer plasma.

Easily connected — Provides an RS-232 port on a 9-pin D connector and an RJ-45 auto-sense 10/100 Mbs Ethernet LAN connection.

Direct port access (2001) — Allows a direct, one-to-one connection (from PC to plasma) through the IPL M PDP-ES, and passes the data without any processing.

User customizable — Develop your own Web pages using off-the-shelf Web authoring software.

2

Chapter Two

Installation and Operation

Installation and Operation

Installation Overview

To install and set up the IPL M PDP-ES interface card, follow these steps:

1 Turn all of the equipment off. Make sure that the Pioneer plasma is turned off and disconnected from its power source.

2 Remove the Pioneer communication ES card from the plasma.

3 Install the Extron IPL M PDP-ES interface card.

4 Attach the LAN and serial cables to the Extron interface card. See *Connecting the Hardware* in chapter 3.

5 Turn on the devices in the following order: serial controller or computer (PC), the switcher or hub, the Pioneer plasma.

6 Configure the IP address on the IPL M PDP-ES using ARP commands (see *Configuring the Hardware* in chapter 3), then access and control the unit using a Web browser.

Installation of the IPL M PDP-ES Interface Card

Within an IPL M PDP-ES compatible plasma are two ES Card Slots in the plasma's connection panel. These slots are designed to house removable cards that provide communication and enhanced data. The Extron IPL M PDP-ES replaces the Pioneer communication ES card.

Removing the Pioneer communication ES card

Before installing the Extron IPL M PDP-ES interface card, you must remove the Pioneer communication ES card shipped within the plasma. The communication ES card is found in the communication ES Card Slot of the connection panel, as shown below.

Pioneer Plasma Display

Connection Panel   Pioneer ES Card Slot (communication)
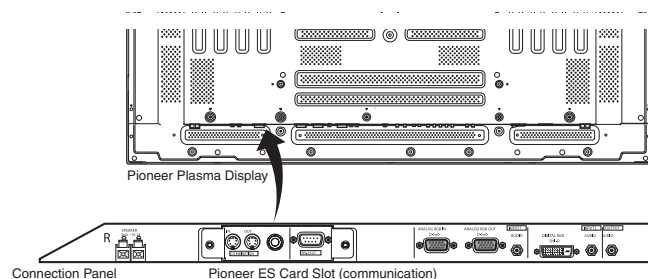
Figure 2-1— Pioneer ES Card Slots

To remove the Pioneer communication ES card, do the following:

1. Ensure that the Pioneer plasma is turned off and disconnected from the power source.

2. If the plasma display is laid with its screen side facing down, ensure that it is on a flat surface with a blanket or other soft material underneath it.

    CAUTION *Never rest the plasma in such a way that weight or pressure is placed on the screen surface.*

3. If the plasma display stand blocks the communication ES card slot, remove or slide the stand away from the working area.

4. Remove the two side screws that keep the Pioneer communication ES card in place, and gently pull the center knob toward you to remove the card.
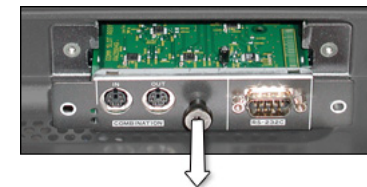
Gently pull the center knob

Figure 2-2 — Removing the Pioneer communication ES card

Installing the Extron IPL M PDP-ES card

To install the Extron IPL M PDP-ES interface card, do the following:

1. Insert the IPL M PDP-ES gently and evenly in between the two rails inside the ES card Slot. Press on the center of the card faceplate to push the card securely into the slot. (See the illustration on the following page).

Push gently

Figure 2-3 — Inserting the IPL M PDP-ES card into the communication slot

CAUTION *Be very careful when inserting the card. Do not use excessive force, and push the card in as straight as possible; a crooked entry could damage the card or the plasma.*

2. When the card is seated securely in the slot, use the spring loaded thumb screws on either end of the card faceplate to secure the card in place.

Thumb screws

Figure 2-4 — Securing the IPL M PDP-ES

3. Affix the Extron IPL M PDP-ES sticker label (Extron part # 33-1154-01) to the display, covering the existing Pioneer label, as shown below.
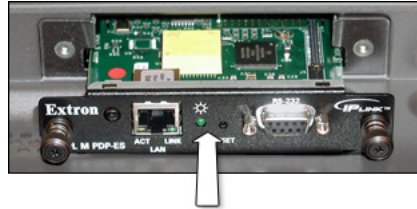
NOTE *Insure that the sticker is placed so that it completely covers the existing Pioneer label.*
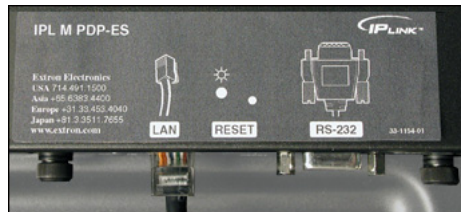
Figure 2-5 — The IPL M PDP-ES sticker label

Panel Features and Cabling

See figure 2-6 below for detailed information about connections, LEDs, and power.
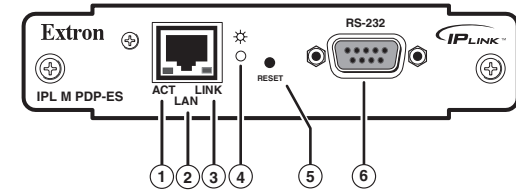
Figure 2-6 — IPL M PDP-ES interface card

Ethernet/LAN communication

With the use of Ethernet/LAN communication, the IPL M PDP-ES can be used to control the plasma display. See chapter 4, *Communication and Control*, for more details.

① **LAN Activity LED —** The yellow LED blinks to indicate LAN activity.

② **LAN connector —** Plug an RJ-45 jack into this socket to connect the unit to a computer network. Use a straight-through cable to connect to a switch, hub, or router; and a crossover cable to connect directly to a PC.

③ **LAN Link LED —** The green LED lights to indicate a good LAN connection.
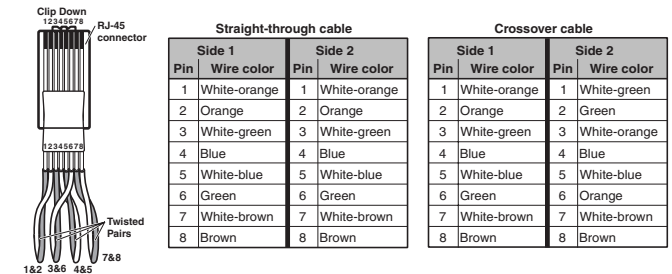
Figure 2-7 — RJ-45 connector wiring

NOTE *For best performance, use a shielded Ethernet cable.*

Power

④ **On/Off indicator LED —** The green LED lights to indicate that the card is receiving power. It also indicates different reset modes.

⑤ **Reset button (recessed)** — See *Resetting the unit*, later in this chapter, for additional details on this multiple function reset button.

RS-232 communication

⑥ **RS-232 port —** Plug a serial cable into this 9-pin D connector for a serial connection.

Factory default protocol for the IPL M PDP-ES interface card is

• 9600 baud

• No parity

• 8 data bits

• 1 stop bit

This port accepts Pioneer's standard RS-232 commands and passes them through to the display. Contact Pioneer for a list of current commands.

See the chart below for the pin assignments of the 9-pin D connector RS-232 port.

```
5        1
 ● ● ● ● ●
  ● ● ● ●
9        6
```

**DB9 Pin Locations
(Female)**
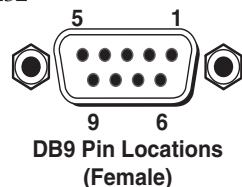
Pin	Function	RS-232
2	Transmit Data/Transmit Data -	TX
3	Receive Data/Receive Data -	RX
5	Signal Ground	GND
1, 4, 6, 7, 8, 9	Not Connected	NC

Figure 2-8 — RS-232, 9-pin D connector pin assignments

Operation

Once the IPL M PDP-ES has been successfully installed and cabled, check the unit's On/Off indicator LED (④) to ensure that the card is plugged in and communicating. At this point, the IPL M PDP-ES is ready to be configured (see chapter 3, *Connection and Configuration*).

If connection or communication problems occur, see *Troubleshooting* in chapter 4. If the troubleshooting tips do not help, check with your local network administrator, or call the Extron S³ Sales & Technical Support Hotline.

Resetting the unit

There are five reset modes available by using the Reset button (⑤) on the front panel. The Reset button is recessed, so use of a pointed stylus, ballpoint pen, or Extron Tweeker is suggested.

CAUTION *Review the reset modes carefully. Use of the wrong reset mode may result in unintended loss of flash memory programming, reassignment of ports, or a IPL M PDP-ES reboot.*

CAUTION *The listed reset modes (with the exception of mode 2) closes all open IP connections to the unit.*

NOTE *If the reset button is continuously held down, every three seconds the LED pulses (blink) and puts the unit in a different reset mode, corresponding to the underscored notes in modes 3 through 5. The mode 5 LED blinks three times, the third blink indicating that it's the last mode.*

The following modes are listed as separate functions, not as a continuation from mode 1 to mode 5.

Mode 1 — Holding the reset button while applying power defaults the unit back to the base firmware that shipped with the unit from the factory. Event scripting does not start when the unit is powered on in this mode. This allows you to recover a unit that has incorrect code or updated firmware running. All user files and settings are maintained. User Web pages may not work correctly with an earlier firmware version.

Mode 2 — Momentarily (<1 second) pressing the reset button and entering three "+"s into the RS-232 port of the interface card (e.g., "+++" within 2 seconds of the momentary press) enables the connected COM port to be used as a console port to send SIS commands. If the three "+"s are not entered in the 2 second time frame, the COM port remains or returns to being a control port only.

NOTE *A mode 2 reset disconnects a pass-through connection.*

Mode 3 — Holding the reset button until the Power LED blinks once (3 seconds), followed by a momentary (<1 second) press turns events either On or Off, depending on the current state of the events:

• If the events are currently stopped following the momentary (<1 second) press, the Power LED *flashes twice*, indicating the starting of events.

- If events are currently running following the momentary (<1 second) press, the Power LED *flashes three times,* indicating the stopping of events.

Each flash lasts for .25 seconds. Nothing happens if the momentary press does not occur within 1 second.

Mode 4 — Holding the reset button until the Power LED blinks twice (6 seconds), followed by a momentary (<1 second) press resets IP settings. The Power LED blinks four times in quick succession, confirming a mode 4 reset. This mode does the following:

1. Enables ARP program capability.

2. Sets the IP address back to its factory IP address.

3. Sets the Subnet address back to its factory default.

4. Sets the Gateway back to its factory default.

5. Sets Port mapping back to its factory default.

6. Turns DHCP off.

7. Turns events off.

Nothing happens if the momentary press does not occur within one second.

Mode 5 — Holding the reset button until the Power LED blinks three times (9 seconds) followed by a momentary (<1 second) press causes an absolute system reset back to factory default conditions (except for firmware upgrades). Nothing happens if the momentary press does not occur within 1 second. The power LED *blinks four times in quick succession*, confirming a mode 5 reset.

IPL M PDP-ES

3

Chapter Three

Connection and Configuration

Connecting the Hardware

Configuring the Hardware

Connection and Configuration

Connecting the Hardware

The IPL M PDP-ES interface card is housed inside of an expansion slot (namely, the ES Card Slot) of a fourth generation Pioneer plasma. Figure 3-1 illustrates a typical setup.
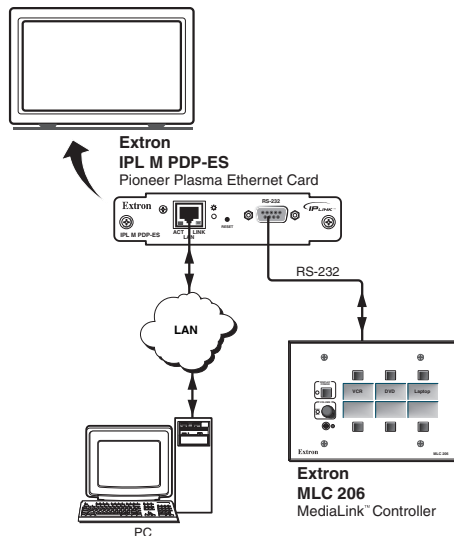

Figure 3-1 — IPL M PDP-ES interface connections

Direct PC connection

This type of connection is used initially to connect to and configure the IPL M PDP-ES card.

1. Plug one end of a Cat 5, crossover Ethernet cable into the rear panel Ethernet connector of the IPL M PDP-ES interface card. Refer to figure 2-7 for RJ-45 connector wiring.

2. Plug the other end of the Ethernet cable into the Ethernet port on your PC.

Ethernet/LAN port

This type of connection is used on an ongoing basis to connect the IPL M PDP-ES interface card to a LAN for remote control of the Pioneer plasma and other connected devices.

1. Plug one end of a Cat 5, straight-through Ethernet cable into the LAN port of the IPL M PDP-ES interface card. Refer to figure 2-7 for RJ-45 connector wiring.

2. Plug the other end of the Ethernet cable into a network switch, hub, or router connected to an Ethernet LAN or to the Internet.

3. Ensure that your PC is connected to the network switch, hub, or router.

RS-232 port

The IPL M PDP-ES can be connected to a controller device or a local PC through its RS-232 port.

PC connection

1. Connect one end of a straight-through serial cable (Extron part #**26-433-03**) to the RS-232 port of the interface card. Refer to figure 2-8 for pin assignments.

2. Connect the other end of the cable to a local PC.

Serial connection

1. Connect the male end of an RS-232 cable (Extron part# **26-437-04**) to the RS-232 port of the interface card. Refer to figure 2-8 for pin assignments.

2. Connect the bare end of the cable to a controller device, such as the MLC 206, using the termination illustrated below.
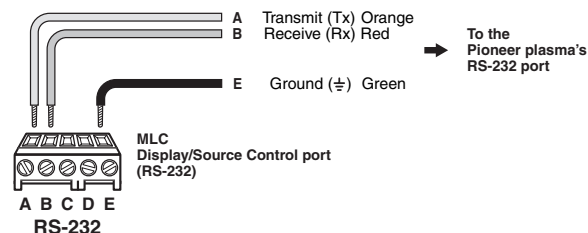
Figure 3-2 — Controller device wiring

Configuring the Hardware

To function together properly, both the controlling PC and the IPL M PDP-ES interface card must be configured correctly: the PC must be network-capable, with the proper protocols installed and the hardware configured correctly.

PC configuration

This manual assumes that you have a Windows PC equipped with an operating network adapter. To allow your PC to work with Extron's Ethernet-controlled products, the TCP/IP protocol must be installed and properly configured.

To use the IPL M PDP-ES on an existing Ethernet LAN intranet, your network administrator can provide you with a unique IP address or confirm whether you need to set up the

Connection and Configuration, cont'd

IPL M PDP-ES card for DHCP (Dynamic Host Configuration protocol) to have an address assigned automatically.

IPL M PDP-ES interface card configuration

When you connect with the IPL M PDP-ES card for the first time, there are three ways to set up the IP address:

1. Use the ARP command method.

2. Use the direct PC method.

3. Use SIS commands through the RS-232 port.

Once the IPL M PDP-ES has an IP address assigned and on an active network, the on-board default Web pages allow you to configure the interface card.

Configuring the IPL M PDP-ES using the ARP command

You can make use of the ARP (Address Resolution Protocol) command to set up an IP address for your IPL M PDP-ES. The ARP command tells your computer to associate the interface card's MAC address with the assigned IP address. You must then use ping to access the IPL M PDP-ES unit, at which point the device server's IP address is reconfigured.

NOTE *In order for you to use this setup method, both your computer and the IPL M PDP-ES interface card must be connected to the same LAN. Ensure that your PC is on the same subnet mask as the IPL M PDP-ES card.*

Use ARP to configure the IP address as follows:

1. Obtain a valid IP address for your IPL M PDP-ES card from your network administrator.

2. Obtain the IPL M PDP-ES card's MAC address (UID #) from the label on its face panel.

3. If the interface card has never been configured and is still set for factory defaults, go to step 4. If it has been configured previously, perform a mode 4 system reset. For detailed information on reset modes, see *Resetting the unit* in chapter 2.

CAUTION *Your IPL M PDP-ES card must be configured with the factory default IP address — 192.168.254.254 —before you execute the ARP command, as described below.*

4. Access the MS-DOS command prompt, then execute the arp –s command as follows:

Enter the desired new IP address and the MAC address (located on the face panel) for the interface card. For example:

arp –s 10.13.170.15   00-05-A6-00-0A-90
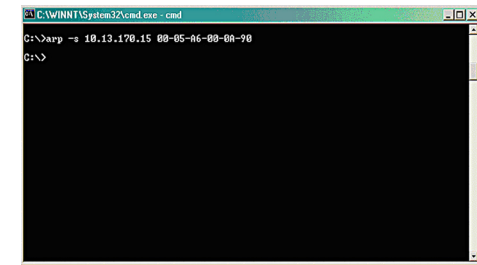
Figure 3-3 — Executing the ARP command

5. Execute a ping command by entering your new IP address at the command prompt. For example:

ping 10.13.170.15

After you issue this command, the unit changes to the new address and starts responding to the ping requests, as shown below. The interface card's IP address should now be updated to the new address. You can now reconnect using either Telnet or the Web to verify that the update was successful.
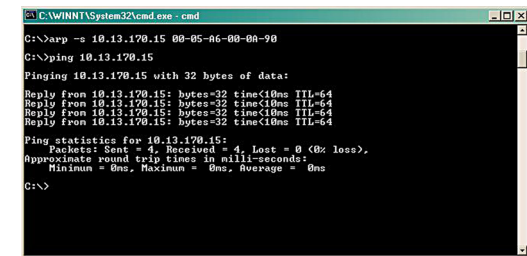
Figure 3-4 — Unit response to a ping request

Connection and Configuration, cont'd

6. After verifying that the change was successful, issue the arp –d command at the DOS prompt. For example:

    arp –d 10.13.170.15 removes 10.13.170.15 from the ARP table

    or

    arp –d removes all static IP addresses from the ARP table.

Configuring the IPL M PDP-ES using direct PC connection

This type of connection is used to initially connect to and configure the IPL M PDP-ES interface card. You must change the card's default settings (IP address, Subnet mask, and [optional] administrator password) in order to use the IPL M PDP-ES on an intranet (LAN) or on the Internet (WAN).

1. Plug one end of a Cat 5, crossover Ethernet cable into the LAN connector of the IPL M PDP-ES interface card. Refer to figure 2-7 for RJ-45 connector wiring.

2. Plug the other end of the Ethernet cable into the Ethernet port on your PC.

3. Right click on the Network Neighborhood or My Network Places icon on your Windows (98, 2000, NT, ME, or XP) desktop, and select Properties from the menu.

4. Right click Local Area Connection and select Properties from the menu.

5. Select Internet Protocol (TCP/IP) from the list and click on Properties again.

    NOTE *If Internet Protocol (TCP/IP) is not on the list, it must be added (installed). Refer to your Windows user's manual or the online Help system for information on how to install the TCP/IP protocol.*

6. Write down your current IP address and Subnet Mask below. If your PC is set to "Obtain an IP address automatically," make a note of that, instead.

    IP Address:

    .   .   .

    Subnet Mask:

    .   .   .

7. Click on "Specify an IP address" or "Use the following IP address" (depending on your operating system), and leave the default gateway blank. Enter the following values:

IP address: **192.168.254.253**

Subnet mask: **255.255.0.0**

8. Save the changes and exit the Network setup. Reboot the PC, if required, for the changes to become effective.

9. Launch your Web browser (Internet Explorer), and type "http://192.168.254.254/" in the address box. The IPL M PDP-ES default Web page is displayed. Refer to *Navigating the default Web pages,* later in this chapter, for information on configuring your unit.

10. After configuring your IPL M PDP-ES, repeat steps 3 and 4, and change your TCP/IP settings back to their original configuration.

Configuring the IPL M PDP-ES using the RS-232 port

Using a straight cable, this type of connection can be used to initially connect to and configure the IPL M PDP-ES interface card.

1. Plug one end of a straight cable to the RS-232 port of the IPL M PDP-ES interface card and the other end to a PC. Refer to figure 2-8 for pin assignments.

2. Obtain a valid IP address for your IPL M PDP-ES card from your network administrator.

3. Run a communication program (such as HyperTerminal or DataViewer) accessed through the COM port.

4. Perform a mode 2 reset. See *Resetting the unit* in chapter 2 for detailed information on the reset modes.

5. Use the Set IP address command to set the IP address. For example, enter

    Esc 10.13.170.15 CI ←

    The unit should respond with

    Ipi • 10.13.170.15 ↵

    Refer to *Command/Response Table for Simple Instruction Set (SIS) Commands* in chapter 4 for more detailed information regarding the SIS commands.

6. Launch your Web browser (Internet Explorer), and type "http://10.13.170.15" in the address box.

    The IPL M PDP-ES default Web page is displayed. Refer to *Communication with the Interface Card* in chapter 4 for information on accessing the Web server.

Firmware upgrades

Firmware upgrades become available periodically as improvements are made to the versatility and functionality of the IPL M PDP-ES interface card. These upgrades are available for download from the Extron Web site. For details on how to upgrade the firmware, see *Upgrading the firmware* in chapter 4.

IPL M PDP-ES

Chapter Four

Communication and Control

Communication with the Interface Card

Programmer's Guide for the Telnet and Web Browser

Pioneer Plasma A/V Device Control

Troubleshooting

Communication and Control

Communication with the Interface Card

The on-board Web server has a set of built in, default Web pages, which can be accessed via a Web browser. These pages are used to control the IPL M PDP-ES interface card within the Pioneer plasma, as well as monitoring and scheduling events. In using Internet Explorer (version 5.5 or higher), you must also have Microsoft Script (version 5.6 or higher).

This chapter describes these default Web pages, which are always available and cannot be erased or overwritten.

Accessing and using the Web server

Access the IPL M PDP-ES interface card through the built in Web server pages as follows:

1. Launch your Web browser.

2. Click in the browser's Address field.

3. Enter your IPL M PDP-ES IP address in the browser's Address field. The browser's Address field should display the address in the following format: http://xx.xx.xxx.xx. For example:

    http://10.13.170.15

If the local system administrators have not changed the value, the factory-specified default, 192.168.254.254, is the correct value for this field.

4. Press the keyboard Enter key.

    NOTE   *If the interface card is password protected, see* Passwords page, *later in this chapter.*

If you are unable to access the Web server, see *Troubleshooting* at the end of this chapter.

Navigating the default Web pages

The IPL M PDP-ES default Web pages include four tabs (Status, Configuration, File Management, and Pioneer) for easy navigation of several administrative options, including system status, password control, file management, and control of the Pioneer plasma itself.

Status tab

The Status tab includes the System Status page (figure 4-1).

The System Status page is the default page of the on-board Web server, and displays the IP settings and serial port settings for the IPL M PDP-ES interface card.
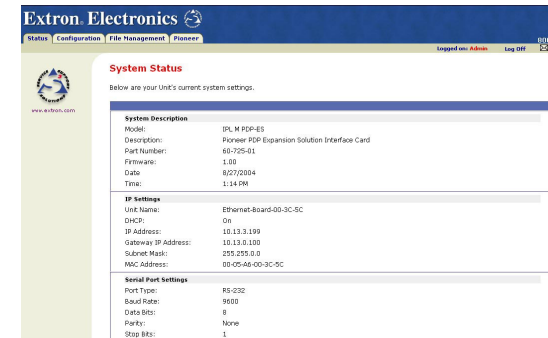
Figure 4-1 — System Status page

Configuration tab

The Configuration tab includes pages that show the current System Settings, Port settings, Passwords, Email Alerts, and Firmware Upgrade data for the IPL M PDP-ES interface card. These pages can be accessed from the left side-bar menu.

System Settings page

The Systems Settings page (figure 4-2) consists of fields where you can view and edit IP administration and system settings. Date and time information can be easily updated.

NOTE   *IP Link products support United States (USA), European Union (EU), and Brazil Daylight Saving Time (DST), "Summer Time".*
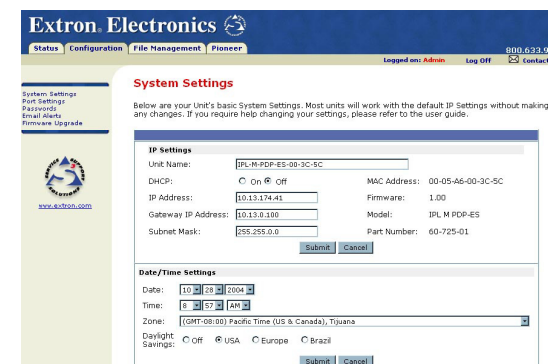
Figure 4-2 — System Settings page

Communication and Control

IP settings fields

The IP settings fields provide a location for viewing and editing settings unique to the interface card. After editing any of the settings on this page, click the Submit button. Explanations for some of these fields follow.

Unit Name

This name field can be changed to any valid name, up to 12 alphanumeric characters.

| NOTE | *The following characters are invalid in the unit name: {space} ~ @ = ' [ ] { } < > ' " ; : | \ and ?.*

DHCP

The Dynamic Host Configuration Protocol (DHCP) is an Internet protocol for automating the configuration of computers that use TCP/IP. DHCP can be used to automatically assign IP addresses, deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and provide other configuration information such as the addresses for printer, time and news servers.

With DHCP "on," you can also fill the Unit Name with your own host name (e.g., classroom1). For specific settings information, see your system administrator.

IP Address

The Address field contains the IP address of the IPL M PDP-ES interface card. This value is encoded in the flash memory of the interface card.

Valid IP addresses consist of four 1-, 2-, or 3-digit numeric subfields separated by dots (periods). Each field can be numbered from 000 through 255. Leading zeroes, up to 3 digits total per field, are optional. Values of 256 and above are invalid.

The default address is 192.168.254.254, but if this conflicts with other equipment at your installation, you can change the IP address to any valid value.

Edit this field and the following fields (Gateway IP Address and Subnet Mask) as follows:

1. Click in the address field.

2. Edit the address as needed.

3. Press the Tab key on the keyboard or click in another field to exit the IP Address field.

4. Click the Submit button to make the address change take affect.

Gateway IP address

The Gateway IP Address field identifies the address of the gateway to the mail server to be used if the interface card and the mail server are not on the same subnet.

| WARNING | *To use Email Alert functions, the Gateway IP must be set. See* Email Alerts page *later in this chapter.*

The gateway IP address has the same validity rules as the system IP address.

Subnet mask field

The Subnet Mask field is used to determine whether the IPL M PDP-ES is on the same subnet as the mail server when you are subnetting.

Port Settings page

The Port Settings page allows you to view the ports settings and specify the baud rate.

To do so

1. Click Port Settings on the menu (on the left side of the window) and the Port Settings screen (figure 4-3) is displayed.

2. Use the drop-down menu to select the desired Baud rate.

3. Click the Submit button to enter the changes, or click the Cancel button to revert to the previous settings.

| NOTE | *If using a control product (e.g., an MLC 206 or the Pioneer PlasmaTrol software) through the IPL M PDP-ES card serial port, the card's baud rate must match the requirements of the control product.*
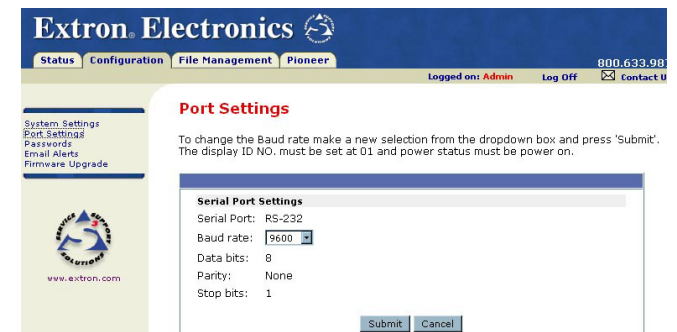

Figure 4-3 — web server Port Settings screen

Communication and Control, cont'd

Passwords page

The fields on the Passwords page are for entering and verifying passwords. Passwords are case sensitive and are limited to 12 uppercase and lowercase alphanumeric characters. Each password must be entered twice; once in the Password field and then again in the Re-enter Password field. Characters in these fields are masked by asterisks (*****).

> **NOTE** *The following characters are invalid in passwords:*
> *{space} + ~ @ = ' [ ] { } < > ' " ; : | \ and ?.*

As shown in figure 4-4, password-protected connections allow two levels of protection: administrator and user. Administrators have access to status information and all function control. Users have access to status information and limited function control. Read-only users have no privileges, and can only view current settings.

> **NOTE** *Users without a password when passwords have been set are referred to as* read-only *users.*

To set passwords for each level of user, do the following on the Passwords page:

1. Click Passwords on the menu (on the left side of the window). The Passwords screen (figure 4-4) is displayed.

2. Enter the password(s) for administrator, and user.

> **NOTE** *If there is no administrator password, your user password is not saved.*

3. Tab over to the second field to reenter the same password.

4. Click the Submit button to enter the changes, or click the Cancel button to revert to previous settings. If a field is left blank, no password(s) is assigned.

> **NOTE** *To clear a password, enter a single space in each field and click the Submit button.*
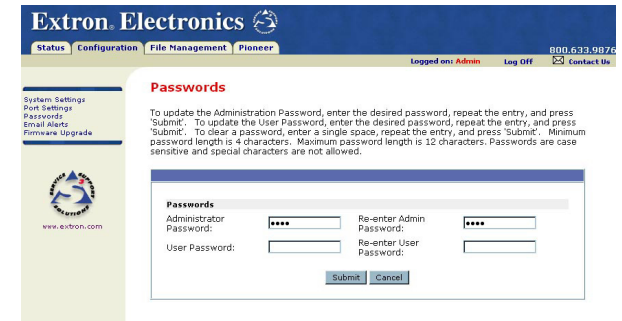
Figure 4-4 — Web server Passwords screen

After you press the Submit button, the password window should appear (figure 4-5).
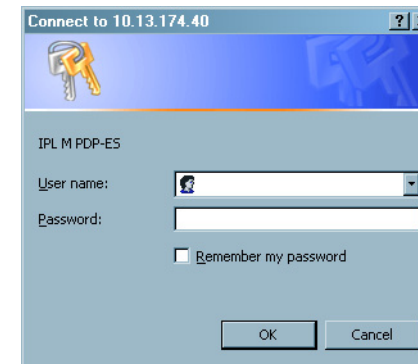
Figure 4-5 — Web server password window

5. Enter your administrator or user password. A User Name entry is not required.

6. Click the OK button.

Once passwords have been set, the Web server window appears whenever a user accesses the unit (figure 4-5). If you click OK without entering a password, you are a read-only user.

> **NOTE** *If you want to clear a password protection at a certain access level, enter a single space in each appropriate field and click the Submit button.*

Email Alerts page

If you have created scheduled events or monitoring tasks on the IPL M PDP-ES interface card, you can write an email alert with a message corresponding to that event or task (e.g., a timer

notification indicating the number of operation hours remaining). The scheduled notification is sent to the appropriate mailbox.

To edit notification email addresses from the Email Alerts page:

1. Click Email Alerts on the menu (on the left side of the window) and the Email Alerts screen (figure 4-6) is displayed.
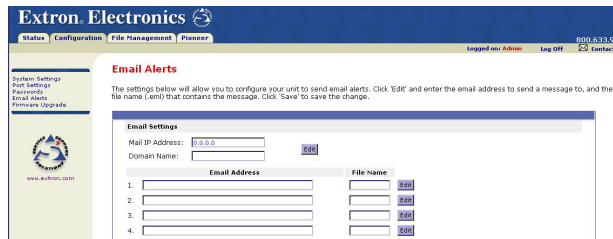
Figure 4-6 — Email Alerts screen

2. Click the corresponding Edit button to go into edit mode.

3. Add, update, or change the IP address and domain name of your mail server under Email Settings.

4. Click Save to keep the changes.

5. Click the Edit buttons to independently edit each numeric Email Address and File Name.

   a. Under Email Address, enter the email address of the alert recipient in one of the numeric mailboxes.

   b. Under File Name, enter the name of the file containing the alert message.

   c. Click Save to keep changes to recipient email addresses and file names.

CAUTION *File names* must *end with an .eml extension.*

NOTE *Due to the 7 character limit for full file names, it's advised that you use numeric titles (e.g., 1.eml, 24.eml). Numeric titles reduce the characters of the file name, and assist in keeping the alert files organized. However, alphabetical titles are permitted.*

NOTE *If an email file (.eml) is missing from a scheduled or monitored event, the user is sent a "Report File Missing" message.*

To finalize your new email alerts within the Web server, do the following:

6. Obtain your gateway IP address from your system administrator.

7. Click System Settings on the menu (figure 4-2) on the left side of the window.

8. Place the gateway IP address into the Gateway IP Address field.

9. Click the Submit button.

Sending an email alert through Telnet

To complete the process of sending an email alert, you must send it through a Telnet session and receive confirmation. To do so

1. Open a Telnet session. For instructions on how to do this, see *Accessing and using Telnet* later in this chapter.

2. Use the "Send email" SIS command to send the alert to the email address of a numeric mailbox (see figure 4-6). Refer to the "Email" section of the *Command/Response Table for Simple Instruction Set (SIS) Commands,* later in this chapter, for specific command codes.

For example, the code for sending an alert from the 4th numeric mailbox would be

Esc 4 SM ←

For information on creating monitoring and scheduling events with email notification from the Web server, see the *Pioneer tab* section, later in this chapter.

Firmware upgrade page

Firmware upgrades become available periodically as improvements are made to the versatility and functionality of the IPL M PDP-ES interface card. These upgrades are available for download from the Extron Web site.

The Firmware Upgrade page (figure 4-7) provides a way to replace the firmware that is coded on the interface card's control board without replacing the firmware chip.

Figure 4-7 — Firmware Upgrade page

Communication and Control, cont'd

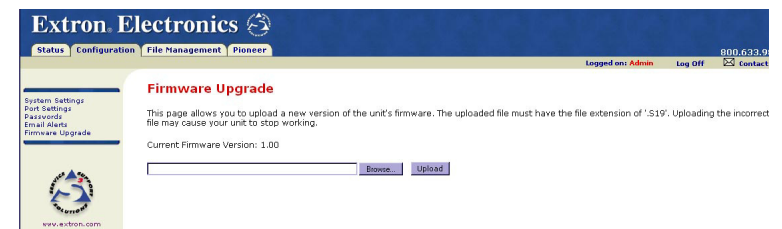Update the firmware as follows:

1. Visit the Extron web site at www.extron.com.

2. Select the IPL product category from the "Product Shortcut" drop-down box, and select the latest firmware file for download.

3. Note the folder to which you save the firmware file.

4. Access the IPL M PDP-ES interface card using the on-board Web server.

5. Select the Configuration tab.

6. Click the Firmware Upgrade link on the left side of the Configuration page.

7. Click the Browse button. An open file window appears.

8. Navigate to the folder where you saved the firmware upgrade file. Select, then double-click the file.

   NOTE   *Valid firmware files must have the file extension ".S19". Any other file extension is not a firmware upgrade.*

   NOTE   *The original factory-installed firmware is permanently available on the IPL M PDP-ES interface card. If the attempted firmware upload fails for any reason, the card reverts to the factory-installed firmware.*

9. Click the Upload button. The firmware upload to the interface card may take a few minutes.

If you have access to view the IPL M PDP-ES interface card, you can get visual confirmation of success: the power LED blinks three times after the upgrade is complete.

File Management tab

The File Management tab includes the File Management page (figure 4-8).

The File Management page is a useful tool that allows you to use and upload existing and custom Web pages. Custom pages can be developed using a third-party Web page development program such as FrontPage or Dreamweaver. File management also allows you to remove unnecessary or outdated files when they are no longer needed.

To add or update files:

1. Select the File Management tab. The File Management screen (figure 4-8) is displayed.
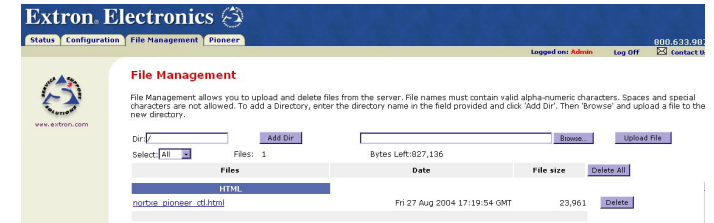
Figure 4-8 — Web server File Management screen

2. Click the Browse button to locate the file(s) you want to upload.

   NOTE   *If you want one of the pages that you create and upload to be the default start-up page, name that file "index.html."*

3. Click the Upload File button to upload the file.

The file is added to the list of files under the Files column.

You can also create directories within the File Management page.

To create a directory:

1. Enter the new directory name in the Dir field alongside the forward slash.

2. Click the Add Dir button. The new directory opens.

3. Click the Browse button, locate your chosen file, and double click.

4. Click the Upload button. The new file appears under the file column.

   NOTE   *A new directory does not appear on the root level unless a file has been placed within it.*

To delete unwanted files or directories:

1. Find the file or directory you wish to delete under the Files list.

2. Click the Delete button of the file or directory to be deleted. If you wish to delete additional files, wait for the screen to refresh before clicking the delete button of the next file.

Communication and Control, cont'd

If you wish to delete all files, click the Delete All button from the root directory. The file count reverts to 0, and all subsequent pages will be deleted.

NOTE *If the last file in a directory is deleted, the empty directory is automatically deleted.*

Pioneer tab

The Pioneer tab includes pages that provide information about the Pioneer plasma. Some of these pages are restricted according to the user's password privileges (see *Passwords page*, earlier in this chapter).

- Pages accessible to **administrator users** include all functions: Status, Controls, Advanced, Schedule, and Monitor.

- Pages accessible to **users** include: Status, Controls, Schedule (view only), and Monitor (view only).

- **Read-only users** have no access to this tab.

WARNING *Certain actions may turn IPL M PDP-ES card events to an "off" status. If this occurs, an error message appears. Click the OK button to return events back to an "on" status.*

NOTE *The Pioneer plasma must have an ID set to 01 to obtain status and control information.*

Display Status page

Accessed through the Status link on the left side of the window, Display Status (figure 4-9) is the default page of the Pioneer tab and allows users to view the description and current status of the Pioneer plasma.

Figure 4-9 — Pioneer Display Status screen

Display Controls page

The Display Controls page (figure 4-10) is accessible from the Controls link on the left side of the window. According to

password level, the buttons and fields on this page allow you to control and/or view the status of the Pioneer plasma display. Explanations for some of these functions follow.

NOTE *For specific functionality details and supported commands, refer to the Pioneer plasma documentation.*
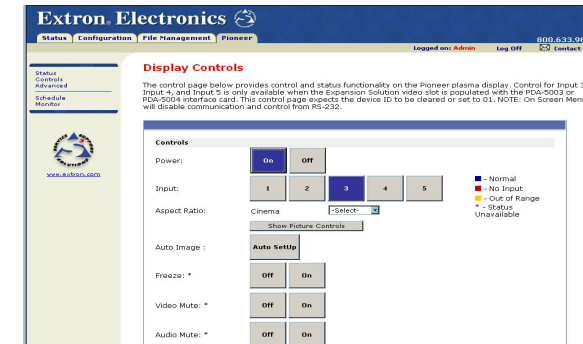
Figure 4-10 — Pioneer Display Controls screen

The status of the Input buttons are visible through buttons of three different colors:

- A **blue** button indicates normal input.

- A **red** button indicates no input.

- A **yellow** button indicates that the signal is out of range.

Power

These buttons power the Pioneer plasma on or off.

NOTE *An "off" status implies standby only. The plasma cannot be completely powered off via the default Web pages.*

Input

These buttons show you the status of the input devices connected to the five ports of the Pioneer plasma.

- *Input 1* provides status for the IPL M PDP-ES port supporting an analog RGBHV signal.

- *Input 2* provides status for the IPL M PDP-ES port supporting a digital RGB signal.

Communication and Control, cont'd

Control for *Input 3*, *Input 4*, and *Input 5* is available only with use of the Expansion Solution video slots for the PDA-5003 or PDA-5004 interface card. See the *Pioneer Operating Instructions* for additional information.

> **WARNING**   *Viewing the on-screen menu on the Pioneer plasma will disable communication with and control of the display. A warning message will appear on the Web page if the on-screen menu is accessed.*

Aspect ratio

You can define the aspect ratio of Input 1 or Input 2 by clicking on each button and setting it accordingly. Each Input is defined separately.

> **NOTE**   *Based on the input device, some aspect ratio options may not be available.*

Show Picture Controls

This button toggles between showing and hiding image adjustment and image size options. These functions can be controlled only with administrator access.

Auto Image

This button sets the screen position and clock to best match the current RGB image input. See the *Pioneer Operating Instructions* for additional information.

Volume

Set the volume by entering a number within the range of 0 to 45 and clicking the Set button.

Sub Volume

This menu can be used to independently set the volume of Inputs 1 and 2.

PIP (Picture in Picture, or PinP)

The Pioneer plasma display's multi-screen function allows the simultaneous display of two inputs. PIP allows a subscreen to display in one of the six areas of the main screen. This function can be toggled off or on. See the *Pioneer Operating Instructions* for additional information.

Advanced Controls page

The Advanced Controls page (figure 4-11) is accessible from the Advanced link on the left side of the window. Explanations for these functions follow.
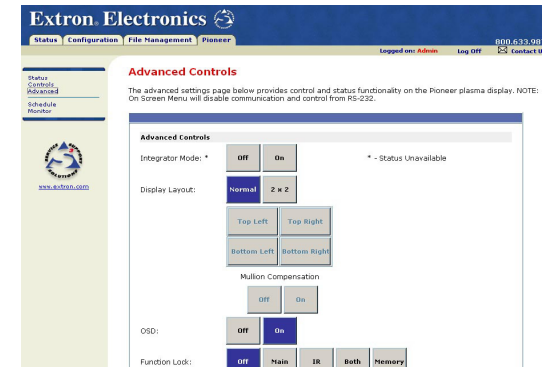
Figure 4-11 — Pioneer Advanced Control screen

Integrator Mode

These buttons allow you to toggle advanced configurations off or on.

Display Layout

These buttons allow you to toggle between normal (full screen) and 2x2 viewing. Clicking the 2x2 button allows you to specify the position of the picture by enabling the buttons below it. The four positioning buttons dictate where the picture will appear on the Pioneer display.

Mullion Compensation allows you to adjust the mullion for images displayed across several monitors and images from separate video sources. This function can be toggled off or on.

OSD (On-screen display)

These buttons allow the on-screen display to be toggled off or on.

Function Lock

These buttons allow administrator level users to lock the Pioneer main panel, IR controls, or both on the Pioneer plasma.

Orbiter

The orbiter button allows you to control the movement of pixels, preventing "screen burn" of the LCD screen. This function can be toggled off or on.

Communication and Control, cont'd

Energy Save

When an energy save function is selected, power consumption is reduced compared to the normal operating mode. When set to Auto, this sensor measures the level of light inside the viewing room. See the *Pioneer Operating Instructions* for additional information.

Schedule page

Using the schedule page (figure 4-12), you can create scheduled events such as power on/off, input changes, or send status email.
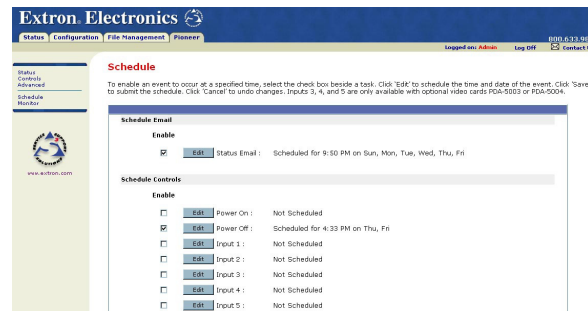
Figure 4-12 — Pioneer Schedule screen

To enable an event to occur at a specified time

1. Click Schedule on the menu on the left side of the window. The Schedule screen (figure 4-12) is displayed.

2. Select the check box beside a task.

3. Click Edit to view the calendar options and schedule the time and date of the weekly event (figure 4-13).
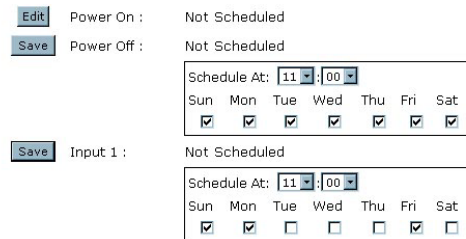
Figure 4-13— Pioneer Schedule calendar

4. Click Save to submit the schedule.

   NOTE   *For Users, this is a view-only function.*

Monitor page

Using the Monitor page (figure 4-13), you can monitor power levels, internal temperature and usage of the Pioneer plasma. An email notification can be sent to a recipient when specified conditions are met or exceeded.

To do so

1. Click Monitor on the menu on the left side of the window. The Monitor screen (figure 4-14) is displayed.

2. Select the check box for the appropriate condition.

3. Make appropriate changes.

4. Click Submit to input the changes.

   NOTE   *For Users, this is a view-only function.*
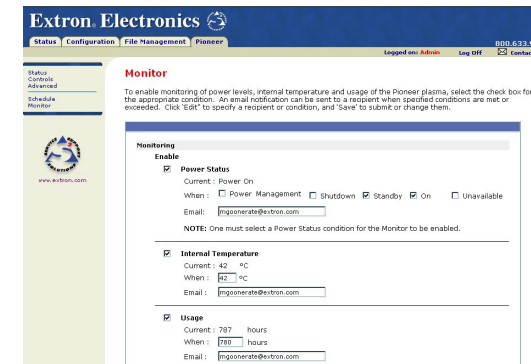
Figure 4-14— Pioneer Monitor screen

NOTE   *If status is unavailable, the system email notification states that the internal temperature is 509° Celsius, and the usage is 65535 hours.*

Programmer's Guide for the Telnet and Web Browser

Using the command/response table

The following are either Telnet (port 23) or Web browser (port 80) commands. There are some minor differences when you are implementing these commands via Telnet or via URL encoding using a Web browser. All commands listed below will work using either connection method but, due to some limitations of the Web browser, the encapsulation characters are modified to make sure that the Web browser will properly handle them. All examples in the command/response table show the proper implementation in a Telnet or Web browser session.

NOTE *Note for Web browsers: all non-alphanumeric characters must be represented as their hex equivalent, such as %xx where xx equals the two character representation of the hex byte that needs to be sent (e.g., a comma would be represented as %2C).*

Telnet	Web Browser
Escape (Hex 1B)	W [must **not** be encoded]
Carriage Return (Hex 0D)	Pipe Character (¦) [must **not** be encoded]

When SIS commands are used through a Web browser, the URL reference is used below to shorten the examples. This would in practice be the full URL of the control interface and Web page reference including all path information.

(e.g., http://192.168.254.254/index.html)

To send any of the commands using a Web browser you need to prefix them with the full URL followed by **?cmd=**. See *URL Encoding* later in this chapter.

NOTE *With Telnet you can use either the Escape commands or the W commands, and the carriage return or the pipe (¦) character. With the Web browser you are required to use the W commands and the pipe character.*

In either method {Data} = Data is directed to a specified port and **must** be encoded if non-alphanumeric.

The *Command/response table for Simple Instruction Set (SIS) commands* later in this chapter lists the commands that the IPL M PDP-ES interface recognizes as valid, the responses that are returned to the host, a description of the command's function or the results of executing the command, and an example of each command in ASCII (Telnet) and URL Encoded (Web).

NOTE *Upper and lower case text can be used interchangeably except where noted.*

Symbol definitions are shown below. An ASCII to HEX conversion table is also provided in figure 4-9 (below).

ASCII to HEX Conversion Table								Esc 1B	CR 0D	LF 0A
20	! 21	" 22	# 23	$ 24	% 25	& 26	' 27
(28	) 29	* 2A	+ 2B	, 2C	- 2D	. 2E	/ 2F
0 30	1 31	2 32	3 33	4 34	5 35	6 36	7 37
8 38	9 39	: 3A	; 3B	< 3C	= 3D	> 3E	? 3F
@ 40	A 41	B 42	C 43	D 44	E 45	F 46	G 47
H 48	I 49	J 4A	K 4B	L 4C	M 4D	N 4E	O 4F
P 50	Q 51	R 52	S 53	T 54	U 55	V 56	W 57
X 58	Y 59	Z 5A	[5B	\ 5C	] 5D	^ 5E	_ 5F
` 60	a 61	b 62	c 63	d 64	e 65	f 66	g 67
h 68	i 69	j 6A	k 6B	l 6C	m 6D	n 6E	o 6F
p 70	q 71	r 72	s 73	t 74	u 75	v 76	w 77
x 78	y 79	z 7A	{ 7B		7C	} 7D	~ 7E	DEL 7F

Figure 4-9 — ASCII-to-HEX conversion table

Symbol definitions

↵ = CR/LF (carriage return/line feed)

← = Carriage return (no line feed)

• = Space (hard) character

X2 = Command data section

Note: For Web encoding only - Data is directed to a specified port and must be encoded (URL encoding) if non-alphanumeric. Since data can include either command terminator, they must be encoded as follows when used within the data section: space (hex: 20) would be encoded as %20 and Plus sign (hex: 2B) would be encoded as %2B.

X3 = Greenwich Mean Time (GMT) offset value (-12.0 to +14.0)

X5 = On/Off status: 0 = Off/Disable; 1 = On/Enable

X11 = Unit version number

X12 = Name is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign/hyphen (-). No blank or space characters are permitted as part of a name. No distinction is made between upper- and lowercase. The first character must be an alpha character. The last character must **not** be a minus sign/hyphen.

X13 = Set local date and time format (MM/DD/YY-HH:MM:SS) (e.g., 11/18/04-10:54:00)

Read local date and time format (day of week, date month year HH:MM:SS) (e.g., Thu, 18 Nov 2004 18:19:33)

X14 = IP address (xxx.xxx.xxx.xxx) Leading zeros in each of four fields are optional in setting values, and are suppressed in returned values.

X15 = Mail Domain name (e.g., extron.com, icia.org)

X18 = Hardware (MAC) address (xx-xx-xx-xx-xx-xx)

X19 = Subnet mask (xxx.xxx.xxx.xxx); leading zeros in each of four fields are optional in setting values, and are suppressed in returned values.

X22 = Verbose/Response mode: 0 = clear/none; 1 = verbose mode; 2=tagged responses for queries; 3 =v erbose mode and tagged responses for queries. Default = 0 for Telnet connections.

> **NOTE** *If tagged responses are enabled, all read commands return the constant string + the data, as setting the value does. (e.g., **Command:** Esc CN ◄ **Response:** Ipn •x12 ↵).*

X23 = Priority status for receive timeout: 0 = priority set to Send Data String command parameters; 1 = priority set to Configure rcv timeout command parameters.

X25 = Baud rate: 1200, 2400, 4800, 9600, 19200, 38400

X33 = Password: allows a maximum length of 12 characters.

> **NOTE** *User password cannot be assigned if no administrator password exists and returns E14. If an admin password is cleared, then the user password is removed too.*

X34 = Daylight saving time: 0 = Off/ignore; 1 = U.S.; 2 =Europe; 3 = Brazil.

X41 = Reading Password: If a password exists, it responds with 4 asterisks (****). If no password exists, it appears empty.

X45 = Email number: Range = 1-48 (max.)

X46 = Email recipient address

X47 = Name of email file to be sent. The first line of file is the subject; the rest is the body of the email.

> **NOTE** *Email files must have the file extension .eml.*

> **NOTE** *There is a 7 character limit for full file names. It is advised that you use numeric titles (e.g., 1.eml, 24.eml). Numeric titles reduce the characters of the file name, and assist in keeping the alert files organized. However, alphabetical titles are permitted.*

X49 = Default Name: combination of model-name and last 3 pairs of MAC address (e.g., IPL-M-PDP-ES 00-02-3D)

X52 = Connection's security level: 00 = anonymous; 11 = user; 12 = Administrator

X69 = The number of seconds before timeout: (min = 1; max = 65535; default = 30 = 300 seconds). If no data is received during the timeout period, the Ethernet connection is closed. Each step = 10 seconds. The response is returned with leading zeros.

> **NOTE** *Applicable to Ethernet only.*

X70 = Number (as optional parameter) inserted into an email message if .eml file has an embedded ESC CR command with no params.

Copyright information

↵© COPYRIGHT 2004, EXTRON ELECTRONICS IPL M PDP-ES, Vx.xx ↵
Thur, 18 Feb 2004 11:27:33 ↵
The copyright message is displayed upon connecting to IP Link product via TCP/IP or Telnet. Mxx is the model and Vx.xx is the firmware version number. The current date and time are displayed. This is followed by a Password prompt.

Password information

The ↵ Password: prompt requires a password (administrator level or user level) followed by a carriage return. The prompt is repeated if the correct password is not entered.

If the correct password is entered, the unit responds with ↵ Login Administrator ↵ or ↵ Login User ↵ , depending on password entered. If passwords are the same for both administrator and user, the unit defaults to administrator privileges.

Error responses

When the IPL T S interface receives a valid command, it executes the command and sends a response to the host device. If the unit is unable to execute the command because the

Communication and Control

command contains invalid parameters, it returns an error response to the host.

E12 — Invalid port number

E13 — Invalid parameter

E14 — Not valid for this configuration

E17 — System timed out

E22 — Busy

E24 — Privilege violation

E25 — Device not present

E26 — Maximum number of connections exceeded

E27 — Invalid Event number

E28 — Bad Filename/File not found

References to errors (at command descriptions on the following pages)

[14] = Commands that give E14 (Invalid Command for this configuration) if sent to Extron product whose current configuration does not support the command.

[24] = Commands that give E24 (Privilege violation) if not administrator level

[27] = Commands that may give E27 (Invalid Event number)

[28] = Commands that may give E28 (File not found)

Command/Response Table for Simple Instruction Set (SIS) commands

Command	ASCII (Telnet)	URL Encoded (Web)	Response
Bidirectional Serial Data port			
Send data string	Esc 1*300*100*3D RS ← [X2]	W1%2A300%2A100%2A3DRS⏎ [X2]	response from command ↵
Configure parameters[24]	Esc 1* [X25] ,N,8,1CP ←	W1%2A [X25] %2CN%2C8%2C1CP⏎	Cpn1•Ccp [X25] ,N,8,1↵
View parameters	Esc 1CP ←	W1CP⏎	[X25] ,N,8,1 ↵
Set receive timeout[24]	Esc 1*400*200*0*3DCE ←	W1%2A400%2A 200%2A0%2A3DCE⏎	Cpn1•Cce400,200,0,3D ↵
View receive timeout	Esc 1CE ←	W1CE⏎	00400, 00200, 0, 00003D ↵
Set redirect mode[24]	Esc 2*1*500*3DCD ←	W2%2A1%2A500%2A3DCP⏎	Cpn 2•Ccd 1, 00500,00003D ↵
Terminated redirect mode[24]	Esc 1*0CD ←	W1%2A0CD⏎	Cpn 1• Ccd 00000,00000,00000L↵
View redirect mode	Esc 1CD ←	W1CD⏎	00002,00500,00003D ↵
Firmware Version/Part Number/Information			
Query firmware version	Q	Q	[X11] ↵
Query verbose version information	0Q	0Q	sum of responses from 2Q-3Q-4Q ↵
Query firmware version	1Q	1Q	[X11] ↵
Query bootstrap version	2Q	2Q	[X11] ↵
Query factory firmware version	3Q	3Q	[X11] (plus web ver-desc-UL date/time) ↵
Query updated firmware version	4Q	4Q	[X11] (plus web ver-desc-UL date/time) ↵
Request part number	N	N	60-725-01 ↵
Request model name	1I	1I	IPL M PDP-ES ↵
Request model description	2I	2I	Pioneer PDP Expansion Solution Interface Card
Request system memory usage	3I	3I	# Bytes used out of 1024 Kbytes ↵
Request user memory usage	4I	4I	# Bytes used out of 704 Kbytes ↵

(*Note:* An asterisk (*) placed after the version number indicates which version is currently running. Question marks (?.??) indicate that only the factory firmware version is loaded. A caret (^) after the version number indicates the firmware version that should be running, but a Mode 1 reset was executed The default factory firmware version is loaded. An exclamation point (!) after the version number indicates corrupted firmware.)

IP Setup Commands

Command	ASCII (Telnet)	URL Encoded (Web)	Response
Set Unit name[24]	Esc [X12] CN ←	W[X12]CN|	Ipn • [X12] ←
Set Unit name to factory default[24]	Esc •CN ←	W%20CN|	Ipn • [X49] ←
View Unit name	Esc CN ←	WCN|	[X12] ←
Set time/date[24]	Esc [X13] CT ←	W[X13]CT|	Ipt• [X13] ←
View time/date	Esc CT ←	WCT|	[X13] ←
Set GMT offset[24]	Esc [X3] CZ ←	W[X3] CZ|	Ipz [X3] ←
View GMT offset	Esc CZ ←	WCZ|	[X3] ←
Set daylight savings time[24]	Esc [X34] CX ←	W[X34]CX|	Ipx [X34] ←
View daylight savings time	Esc CX ←	WCX|	[X34] ←
Set DHCP on[24]	Esc 1DH ←	W1DH|	Idh 1 ←
Set DHCP off[24]	Esc 0DH ←	W0DH|	Idh 0 ←
View DHCP mode	Esc DH ←	WDH|	[X5] ←
Set IP address[24]	Esc [X14] CI ←	W[X14] CI|	Ipi• [X14] ←
View IP address	Esc CI ←	WCI|	[X14] ←
View hardware address (MAC)	Esc CH ←	WCH|	[X18] ←
Set subnet mask[24]	Esc [X19] CS ←	W[X19]CS|	Ips• [X19] ←
View subnet mask	Esc CS ←	WCS|	[X19] ←
Set gateway IP address[24]	Esc [X14] CG ←	W[X14] CG|	Ipg• [X14] ←
View gateway IP address[24]	Esc CG ←	WCG|	[X14] ←
Set verbose mode[24]	Esc [X22] CV ←	W [X22]CV|	Vrb [X22] ←
View verbose mode	Esc CV ←	WCV|	[X22] ←
Get connection listing	Esc CC ←	WCC|	Number of connections

Password and Security Settings

Command	ASCII (Telnet)	URL Encoded (Web)	Response
Set administrator password[24]	Esc [X33] CA ←	W[X33] CA|	Ipa• [X41] ←
Clear administrator password[24]	Esc •CA ←	W%20CA|	Ipa• ←
View administrator password[24]	Esc CA ←	WCA|	[X41] ←
Set user password[24]	Esc [X33] CU ←	W[X33]CU|	Ipu• [X41] ←
Clear user password[24]	Esc •CU ←	W%20CU|	Ipu• ←
View user password[24]	Esc CU ←	WCU|	[X41] ←
View connection's security level	Esc CK ←	W CK|	[X52] ←

File Commands

Command	ASCII (Telnet)	URL Encoded (Web)	Response
List files from current directory	Esc DF ←	W DF|	W DF|

Telnet text responses:

filename x• date/time • length ←
filename x• date/time • length ←
filename x• date/time • length ←
...
space_remaining • Bytes Left ← ←

Web responses:

var file - new Array():
file [1] = 'filename1, date1, filesize1';
file [2] = 'filename2, date2, filesize2';
...
file [n] = 'filename n, date n, filesize n';
file [n+1] = 'space remaining, Bytes left'

Command	ASCII (Telnet)	URL Encoded (Web)	Response
List Files from current Dir. & below	Esc LF ←		W LF|

Communication and Control, cont'd

Command	ASCII (Telnet)	URL Encoded (Web)	Response
Directories			
Change / Create directory	Esc path/directory/CJ ↵	W path/directory/CJ⏎	Dir•path/directory/ ↵
Back to root directory	Esc / CJ ↵	W%2F CJ⏎	Dir• / ↵
Up one directory	Esc ..CJ ↵	W%2E%2E CJ⏎	Dir•path/directory/ ↵
View current directory	Esc CJ ↵	W CJ⏎	Dir•path/directory/ ↵
Note: *Directory does not truly exist until a file has been copied into that path.*			
Erase current dir. & its files[24][28]	Esc /EF ↵	W / EF⏎	Ddl↵
Erase current dir. & subdirectories[24][28]	Esc //EF ↵	W // EF⏎	Ddl↵
Erase user-supplied Web page and files[24][28]	Esc *filename* EF ↵	W*filename*EF⏎	Del•*filename* ↵
Re-map port designations			
Set Telnet port map [24]	Esc {port#}MT ↵	W{port#}MT⏎	Pmt {port#}↵
Reset Telnet port map [24]	Esc 23MT ↵	W23MT⏎	Pmt 00023↵
Disable Telnet port map [24]	Esc 0MT ↵	W0MT⏎	Pmt 00000↵
View Telnet port map [24]	Esc MT ↵	WMT⏎	{port#}↵
Set Web port map [24]	Esc {port#}MH ↵	W{port#}MH⏎	Pmh {port#}↵

Command	ASCII (Telnet)	URL Encoded (Web)	Response
Re-map port designations, continued			
Reset Web port map [24]	Esc 80MH ↵	W80MH⏎	Pmh 00080↵
Disable Web port map [24]	Esc 0MH ↵	W0MH⏎	Pmh 00000↵
View Web port map [24]	Esc MH ↵	WMH⏎	{port#}↵
Set Direct Access port map [24]	Esc {port#}MD ↵	W {port#}MD⏎	Pmd {port#}↵
Reset Direct Access port map [24]	Esc 2001MD ↵	W 2001MD⏎	Pmd 02001↵
Disable Direct Access port map [24]	Esc 0MD ↵	W 0MD⏎	Pmd 00000↵
View Direct Access port map [24]	Esc MD ↵	WMD⏎	{port#}↵
Web Browser Specific			
Read response from last URL cmd	Esc UB ↵	WUB⏎	response from command ↵
Email			
Configure email events[24]	Esc [X45], [X46], [X47]CR ↵	W[X45], [X46], [X47]CR⏎	Ipr [X45], [X46], [X47] ↵
View email events	Esc [X45]CR ↵	W [X45]CR⏎	[X46], [X47] ↵
Send email (event)[24]	Esc [X45]SM ↵	W [X45]SM⏎	Eml [X45] ↵
Set mail server IP, domain name[24]	Esc [X14], [X15]CM ↵	W[X14]%2C[X15]CM⏎	Ipm • [X14], [X15] ↵
View mail server IP, domain name	Esc CM ↵	W[X14]%2C[X15]CM⏎	[X14], [X15] ↵
Send email (using different file)[24]	Esc [X45], [X70], [X47]SM ↵	W[X45] %2C [X70]%2C[X47]SM⏎	Eml [X45] ↵

Command	ASCII (Telnet)	URL Encoded (Web)	Response
Ethernet Data Port			
Set current conn port timeout	Esc 0*[X69]TC →	W0 %2A[X69]TC|	Pti 0*[X69] ↵
View current conn port timeout	Esc 0TC →	W0TC|	[X69] ↵
Set global IP port timeout	Esc 1*[X69]TC →	W1 %2A[X69]TC|	Pti 1*[X69] ↵
View global IP port timeout	Esc 1TC →	W1TC|	[X69] ↵
Event Control			
Start Events [24][27]	Esc 1AE →	W1AE|	Ego ↵
Stop Events [24][27]	Esc 0AE →	W0AE|	Est ↵
Query number of events running	Esc AE →	WAE|	#### ↵
Reset (ZAP)/Erase Commands			
Erase user-supplied Web page/file [24][28]	Esc filename EF →	W filename EF|	Del•filename↵
Erase flash memory [24]	Esc ZFFF →	WZFFF|	Zpf ↵
Reset all device settings to factory [24]	Esc ZXXX →	WZXXX|	Zpx ↵
Absolute System Reset [24]	Esc ZQQQ →	WZQQQ|	Zpq↵
(Includes IP address = 192.168.254.254, subnet mask = 255.255.0.0)			

Pioneer Plasma A/V Device Control

Once the IPL M PDP-ES interface card is configured, control of A/V devices may be accomplished in several ways. These include Web pages, Telnet, and direct port access.

Custom Web pages

These pages can be either modified versions of the existing Web pages, or new Web pages developed in the field.

Web page development can be done with a Web site development tool such as FrontPage or Dreamweaver. Custom Web pages are loadable with the Web server File Manager (see *File Management tab* earlier in this chapter).

NOTE *If you want one of the pages that you create and upload to be the default start-up page, name that file "index.html."*

Telnet (port 23)

Telnet, short for Telecommunications Network, provides a way for you to connect to a computer or server (in this case the IPL M PDP-ES interface card) on a network. Once connected via Telnet, you can send ASCII commands (see the *Command/ response table for Simple Instruction Set (SIS) commands* earlier in this chapter) to the IPL M PDP-ES.

Accessing and using Telnet

1. From the Windows Start menu, Click Run, then enter "Telnet" and click OK. The Telnet program starts (see figure 4-18).
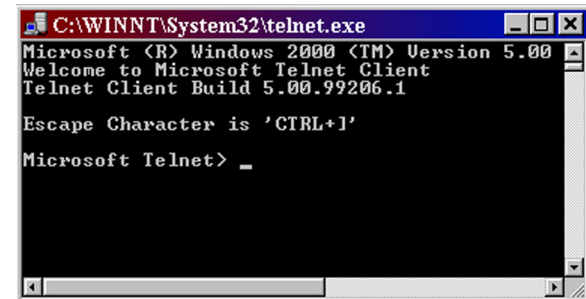

Figure 4-18 — Telnet command prompt

2. At the command prompt, enter "open" and press Enter.

Communication and Control, cont'd

3. At the < to > prompt, enter the IP address of the IPL M PDP-ES. (The default IP address is 192.168.254.254, but it may have been changed in the setup or configuration process. If it was changed, use the new address.) Telnet defaults to port 23.
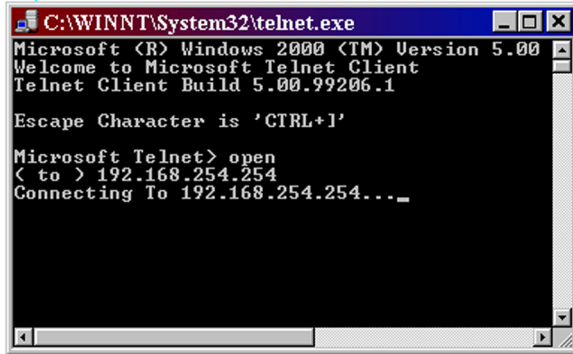

Figure 4-19 — Connecting to the IP address

4. If passwords were set up for the connected system, you are prompted to log in as an administrator or a user. Otherwise the system responds with a <cr/lf>.

5. Once you are connected, you can enter SIS commands as desired.

6. When you are finished entering commands to the interface, enter **CTRL +** to close the open connection.

7. Enter "quit" at the command prompt to quit Telnet.

Direct access (port 2001)

Direct access allows a direct, one-to-one connection to the plasma via a reserved IP port number. When a TCP session is initiated to port 2001, all data sent and received passes directly to and from that port without any processing.

Using direct access

1. Open a direct access Telnet session by entering the IP address followed by a space, then a port number 2001 (e.g., 192.168.244.244 2001).

2. Send Pioneer commands directly to the Pioneer plasma.

   NOTE *For specific functionality details and supported commands, refer to the Pioneer Plasma documentation.*

3. Close the Telnet session to end the direct access session.

4. Use port redirect to finish the process. See the next section for detailed instructions.

   NOTE *You can force the direct access session to close by logging on as administrator and entering "Esc 1 * 0CD ← ."*

Port redirect

Using the port redirector, the card allows data to be sent and received directly to and from the display and back to the client (e.g., a PC or the MLC 206) without any processing.

1. Open another Telnet session (see the previous section for details).

2. Reestablish a pass-through by using the "set redirect mode" command:

   Esc 2*1*500*3DCD ←

Troubleshooting

Turn on the plasma display and the control devices (PC, laptop, etc.).

If the output Pioneer plasma cannot be remotely controlled, check the following:

Power connections

1. Ensure that the Pioneer plasma is plugged in.

2. If the Pioneer and the IPL M PDP-ES are receiving power, its Power LED should be on.

Data connections

1. Check the cabling connections and make adjustments as needed. The Link LEDs on the IPL M PDP-ES and the computer should be solid green if a network connection is detected. If these LEDs are not lit, the cable is either faulty or not plugged in; or the wrong type of cable is being used (refer to *Connecting the Hardware*, in chapter 3).

2. Try to ping the unit by entering **ping 192.168.254.254** at the DOS command prompt; or use the Web address provided to you by your system administrator. If you get no response:

   a. Make sure your unit is using the appropriate subnet mask and/or gateway IP address (check with your system administrator).

   b. Make sure your PC does not have a software firewall program that might block the IP address of the unit.

Communication and Control, cont'd

3. If contact is established with the unit, but the unit's Web pages cannot be accessed by your Web browser, verify (in the Options or Preferences menu) that your Web browser is configured for direct network connection and not set up to use a proxy server.

Serial connections

1. Ensure that Pioneer plasma ID is set to 01 (see the Pioneer plasma documentation for details).

2. Check to see that events are running.

3. Ensure that the on-screen display is off.

4. Check that the IPL M PDP-ES interface card baud rate matches that of the control device (e.g., a PC or the MLC 206).

If status is missing or unavailable, check the following:

1. Ensure that the Pioneer plasma ID is set to 01 (see the Pioneer plasma documentation for details).

2. Check that the IPL M PDP-ES interface card baud rate matches that of the control device (e.g., a PC or the MLC 206).

3. Ensure that the redirect port has been enabled.

If you are unable to access the Web server, do the following:

Ensure that your PC is on the same subnet mask as the IPL M PDP-ES card. If not, see *Configuring the IPL M PDP-ES using direct PC connection* in chapter 3 for detailed instructions on setting up the subnet mask.

If you are still experiencing problems, call the Extron S[3] Sales & Technical Support Hotline.

IPL M PDP-ES

A

Appendix A

Specifications, Part Numbers, and Accessories

Specifications

Parts

Specifications, Part Numbers, and Accessories

Specifications

Ethernet control interface

Connectors .... 1 RJ-45 male connector

Data rate .... 10/100 Base-T, half/full duplex with autodetect

Protocols .... ARP, DHCP, ICMP (ping), TCP/IP, UDP/IP, Telnet, HTTP, SMTP

Default settings .... Link speed and duplex level = autodetected,
IP address = 192.168.254.254,
subnet mask = 255.255.0.0,
default gateway = 0.0.0.0,
DHCP = off

Serial control interface

Port number/type 1 RS-232

Connectors .... (1) 9-pin female D

Baud rate and protocol .... 1200, 2400, 4800, 9600 (default), 19200, 38400 baud (adjustable); 8 data bits, 1 stop bit, no parity

Pin configurations (RS-232) .... 2 = RX, 3 = TX, 5 = GND

General

Power .... Supplied by a Pioneer plasma display

Temperature/humidity .... Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, noncondensing
Operating +32° to +122°F (0° to +50°C) / 10% to 90%, noncondensing

Rack mount .... No

Enclosure type .... Metal faceplate

Product dimensions

    Faceplate .... 1.09" H x 4.80" W x 0.26" D (2.6 cm H x 12.2 cm W x 0.7 cm D)

    Device .... 0.9" H x 3.6" W x 3.5" D (2.3 cm H x 9.2 cm W x 8.8 cm D)
(Depth excludes connectors.)

Product weight………………… 0.2 lbs (0.11kg)

Shipping weight……………….. 1 lb (1 kg)

Vibration .... ISTA 1A in carton (International Safe Transit Association)

Listings .... UL1950/UL6500, CUL

Compliances .... CE, FCC part 15 B class B, VCCI class B, AS/NZS, ICES, IFCC Class A, IEC60950, IEC60056, EN550ee class B, EN55024, EN61000-3-2,-3-3

MTBF .... 30,000 hours

Warranty .... 3 years parts and labor

Parts

Included parts

Included parts	Replacement part number
IPL M PDP-ES	60-725-01
IPL M PDP-ES User's Manual	68-1021-01
IPL M PDP-ES Quick Start Card	68-1021-10
Connector Label (Apply to Pioneer display)	33-1154-01
Tweeker	

B

Appendix B

Glossary

Glossary

GLOSSARY

10/100Base-T is Ethernet that uses Unshielded Twisted Pair (UTP - Cat 5, etc.) cable, in which the amount of data transmitted between two points in a given amount of time is equal to either 10 Mbps or 100 Mbps.

Address Resolution Protocol (ARP) is a protocol that assigns an IP address to a device based on the device's MAC or physical machine address.

Custom Web-page is any file that can be loaded into an IPL box and served by the IPL's internal Web-server. A custom Web page can provide control of devices attached to the IPL without use of the Global Viewer (GV) or Global Viewer Configurator (GVC). This is true with or without an accompanying event script. Any number and size of graphics can be used, but if they are too large to fit on the IPL, you can write your Web page so that they can be served from another Web server. If you install Microsoft Internet Information Services (IIS) on your desktop, you can serve any page on its hard disk. The IPL functions like a little computer with a Web-server—you can use it for various Web tasks.

DHCP (Dynamic Host Configuration Protocol) is a standardized communications protocol that enables network administrators to locally and automatically manage the assignment of IP addresses in an organization's network.

Driver is a Global Viewer Configurator (GVC) compatible package. It includes the event script that controls devices.

Ethernet is a network protocol that uses MAC addresses instead of IP addresses to exchange data between computers. Using ARP (see above) with TCP/IP support, Ethernet devices can be connected to the Internet. An Ethernet LAN typically uses unshielded twisted pair (UTP) wires. Ethernet systems currently provide transmission speeds of 10 Mbps or 100 Mbps.

Event script is a program that runs on an IPL box and issues queries and commands to the attached devices. As long as event scripts are turned on, event scripts run continuously on the box.

Global Viewer Configurator (GVC) is a Windows-based program that, based on user input, creates a Global Viewer (GV). The GVC requests system information such as which devices you have and your current list of IP addresses. With this information, GVC creates a GV for your specific devices. The GVC also compiles the event scripts and loads the GV and event scripts onto the box. When using the GVC, the user must specify the port number for each device (for attached devices to be controlled, they must be on that port). In order for multiple IP-link boxes to appear in the same GV, all the boxes must be configured at the same time, using the GVC.

Global Viewer (GV) is a Web application that is loaded into the memory of an IPL unit. These pages provide an interface for control of devices attached to the IPL product. They communicate with the event scripts running on the unit, and the event scripts issue the commands and queries. This communication between the Web pages and the event scripts occurs through predetermined memory locations in the IPL unit.

HTTP (HyperText Transfer Protocol) is a Web protocol based on TCP/IP, that is used to fetch HyperText objects from remote Web pages.

Internet Protocol (IP) is the protocol or standard used to send information from one computer to another on the Internet.

IP address is a unique, 32-bit binary number (12 digit decimal number, xxx.xxx.xxx.xxx) that identifies each sender and each receiver of information connected to a LAN, WAN, or the Internet. IP addresses can be static (see Static IP) or dynamic (see DHCP).

IP Netmask is a 32-bit binary number (12 digit decimal number, xxx.xxx.xxx.xxx) used on subnets (smaller, local networks) to help the router determine which network traffic gets routed internally to local computers and which network traffic goes out on the Internet.

Media Access Control (MAC) Address is a unique hardware number given to devices that connect to the Internet. When your computer or networking device (router, hub, interface, etc.) is connected to the Internet, a table (see ARP) relates the device's IP address to its corresponding physical (MAC) address on the LAN.

Pass-through allows control systems to work with the IPL and provides a link between two ports.

Ping is a utility that tests network connections. It is used to determine if the host has an operating connection and is able to exchange information with another host.

Glossary, cont'd

Port number is a preassigned address within a server that provides a direct route from the application to the Transport layer, or from the Transport layer to the application, of a TCP/IP system.

Static IP refers to an IP address that has been specifically (instead of dynamically; see DHCP earlier in this chapter) assigned to a device or system in a network configuration. This type of address requires manual configuration of the actual network device or system and can be changed only manually or by enabling DHCP.

Transmission Control Protocol/Internet Protocol (TCP/IP) is the communication protocol (language) of the Internet. Computers and devices with direct access to the Internet are provided with a copy of the TCP/IP program to allow them to send and receive information in an understandable form.

Telnet is a utility available on most PCs that allows the computer system to communicate with one of its remote users/ clients. A user who wishes to access a remote system initiates a Telnet session, using the address of the remote client. The user may be prompted to provide a user name and password if the client is set up to require them.

URL encoding allows you to send information and commands to the unit to change its configuration or provide you with feedback.

Glossary, cont'd